S 622.33 M26Lhh 1986
L. C. Hanson Company
Larson-Hubbs, Hill County, Montana

FINAL REPORT

LARSON-HUBBS
HILL COUNTY, MONTANA

JANUARY, 1986

STATE DOCUMENTS COLLECTION

JAN 16 1991

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

PLEASE RETURN

L. C. HANSON COMPANY
CONSULTING ENGINEERS & SURVEYORS
HELENA — GREAT FALLS — GLENDIVE

MONTANA STATE LIBRARY
S 622.33 M26Lhh 1986 c.1
Larson-Hubbs, Hill County, Montana :fina
3 0864 00070290 5

P.O. Box 299
Lower Level — 3108 McHugh Drive
Helena, Montana 59624

FINAL REPORT

LARSON-HUBBS
HILL COUNTY, MONTANA

JANUARY, 1986

PREPARED FOR: MR. RICHARD JUNTUNEN, CHIEF
Abandoned Mine Reclamation Bureau
Department of State Lands
1625 11th Avenue
Helena, MT 59620

PREPARED BY: L. C. HANSON COMPANY
Consulting Engineers
PO Box 299
3108 McHugh Lane
Helena, MT 59624

KENT M. BARNES, E.I.T.
Project Engineer

BILL KRAMLICH
Project Inspector

L. C. HANSON COMPANY
CONSULTING ENGINEERS & SURVEYORS
HELENA — GREAT FALLS — GLENDIVE

Digitized by the Internet Archive
in 2014

https://archive.org/details/larsonhubbshillc1986lcha

LARSON-HUBBS

SCOPE:

The objective of this project was to perform primarily surface reclamation on an abandoned coal mine. This reclamation included the disposal of seven coal waste piles, backfilling of surface subsidence and collapsed adits, cleanup of debris, and revegetation of disturbed areas.

PROJECT LOCATION:

The site is located along Montana 232 at a county road intersection approximately four miles north of Havre, Montana. The legal description is the SW 1/4 of Section 24 and the NW 1/4 of Section 25, T33N, R15E in Hill County, Montana.

HISTORY:

The site consists of two abandoned mines, the Larson Mine and the Hubbs Mine. The Larson Mine is located on the south side of the county road. This mine appears to have been a fairly small room and pillar operation. Access to the coal was through drifts driven in from the coulees. The Hubbs Mine was on the north side of the county road. No evidence exists that gives the method of mining. The mine entry appears to have been a slope entry located just north of the county road but the entry had been obliterated. Both mines were operated in the 1930's and early 1940's.

SURFACE CONDITION:

The Larson Mine area was used for cattle grazing. Several grain bins are located adjacent to the county road. The past mining had left about six coal waste piles and four old drift entrys. The drifts had

collapsed and were closed. About 1½ acres of land were heavily subsided and new subsidence was occurring. Garbage, agricultural waste, and mining debris was scattered over much of the site and in subsidence holes and collapsed entrys.

The Hubbs Mine is bordered on the south by the county road, on the west by a crop field, and on the northeast by Montana 232. No productive use is being made of this area. One large coal waste pile and two small subsidences are the only evidence of the previous mining.

PROJECT PLANNING:

Project planning began in 1983 with site mapping by photogrametry and interviews with local landowners and residents. The initial information indicated that the abandoned mines may extend under Montana 232, the county road, and the existing grain bins. A program of resistivity testing and exploratory drilling was set up to investigate these hazards.

The resistivity testing was performed by GeoScience and Engineering of Billings, Montana. Resistivity lines were run along Montana 232 and along the county road and around the grain bins. Preliminary results from this testing also indicated that the highway, county road, and the grain bins were undermined. An exploratory drilling program was then set up to investigate the hazards indicated by the resistivity work. All exploratory drilling was done by a local water well driller under the direction of L. C. Hanson Company. The initial drilling generally agreed with the resistivity results in only one part of the site. The lack of agreement between the drilling and the resistivity work was probably due to the variability of the glacial till and the variable depth to bedrock. It was decided that further drilling work was necessary to identify any hazard to the roads and grain bins. This drilling was performed in August, 1984, and then all exploratory information was evaluated.

The results of all the exploratory information indicated that neither the county road or the grain bins were undermined. The exploration identified an approximately 130-foot long section of Montana 232 that is undermined. This area was first suspected since it is between two subsidence features. The undermining was confirmed by drilling both sides of the highway.

At this point the reclamation work at this site was divided into two projects. LARSON HUBBS was to include the abatement of surface hazards and environmental concerns and LARSON HUBBS II was to deal with the highway undermining. The LARSON HUBBS II project will be covered in detail in a separate report.

The LARSON HUBBS project was scheduled for construction during the 1985 season and Plans and Specifications were drawn up. Major items of work included disposing of the coal waste, debris cleanup, and backfilling subsidence and a mine opening. The plan called for placing the coal waste in two pits. One pit is north of the county road on the Hubbs Mine site and the other pit is south of the county road on the Larson Mine site. This system of pits was chosen in order to contain the coal wastes on their original mine site and to avoid hauling coal waste across property boundaries.

WORK DESCRIPTION:

On May 24, 1985 bids were opened for LARSON HUBBS. The low bidder was Swan and Sons Construction of Anaconda, Montana. Construction began on June 20, 1985 and progressed at a slow rate. The Contractor, Swan and Sons, was working on another reclamation project in the area and used LARSON HUBBS as a filler during slow times at the other project. Virtually no work was done from July 3rd to July 30th. From August 1st to the end of the project the work progressed quickly. All work was completed on October 3, 1985.

The Contractor primarily used scrapers to haul the coal waste to the

disposal pits. On the Larson Mine site several piles extended down banks into drainages. The piles were excavated from above and within the pile by a track-mounted backhoe. The material was then loaded into the hauling vehicle. This procedure resulted in a minimum of disturbance around the pile.

The original Contract specified the order of revegetation activities to be as follows: apply and incorporate fertilzer, seed, and then apply mulch. A Change Order was worked out with the Contractor that allowed the Contractor to apply mulch at the completion of all other work items and then wait to apply seed and fertilizer until the regular seeding dates.

A dispute arose over mulching techniques. The Contract called for vegetative mulch applied at a rate of 4000 pounds per acre anchored into the seedbed by crimping. The Contractor insisted that crimping was just a fancy word for disking. On August 29, 1985, the Contractor began mulching and attempted to crimp the mulch with his disk. This method was found to be completely unsatisfactory. Photos number 10 and 11 show a typical mulched area before and after disking. When it was pointed out to the Contractor that his disking was not working, the Contractor got very excited, refused to discuss the crimping work, and left the site. The Contractor later returned with a local farmer and began duckfooting the mulched areas. The duckfoot broke up the upper eight to fifteen inches of soil and partially incorporated the mulch into the soil. It was decided that this operation was the best that could be done at this point since mulch had already been spread and an actual crimper was not available.

QUANTITY SUMMARY:

The following is a summary of the primary reclamation items for this project.

Salvage and Replace Topsoil	6976 C.Y.
Close Mine Opening, Adit	1 Each
Subsidence Backfill	399 C.Y.
Waste Pile Disposal	4664 C.Y.
Disposal Pit Excavation	9616 C.Y.
Type F-3 Farm Fence	1584 L.F.
Seeding, Fertilizing, Mulching	8.17 Acre
TOTAL CONSTRUCTION COST	$ 49,420.30
Mine Area Reclaimed	5.2 Acre
Cost per Acre Reclaimed	$ 9,503.90

COMMENTS:

The project progressed smoothly through construction. Overall, Swan and Sons performed good work in accordance with the Specifications. The dispute over mulching techniques was probably unavoidable due to the Contractor's absolute insistance that mulch crimping and disking are the same operation.

The completed project was approved by the Department of State Lands, L. C. Hanson Company, and the Landowner.

LARSON-HUBBS SLIDE LOG

1.	July 20, 1985	Start of topsoil stripping from Disposal Area No. 1.
2.	July 21, 1985	Stripping topsoil from Disposal Area No. 2.
3.	July 30, 1985	Backhoe collecting debris on south side of site.
4.	July 30, 1985	Debris pile collected by backhoe.
5.	August 9, 1985	Necessary drainage ditch constructed downstream of Waste Pile P-6 in bottom of coulee.
6.	August 9, 1985	Slope at Waste Pile P-6 after coal waste has been removed.
7.	August 9, 1985	Small earth dam adjacent to Waste Pile P-6 prior to topsoiling.
8.	August 26, 1985	Vegetative mulch spread on Disposal Area No. 2.
9.	August 26, 1985	Vegetative mulch spread on Disposal Area No. 2.
10.	August 26, 1985	Vegetative mulch applied on a portion of Disposal Area No. 2 prior to Contractor attempting crimping with his disk.
11.	August 26, 1985	Same area as photo number 10 after disking by Contractor. Mulch not anchored into seedbed.
12.	August 29, 1985	Area of Waste Pile P-2 after seed, fertilizer, and wood fibre mulch have been applied.
13.	August 29, 1985	Area of Waste Pile P-3 after seed, fertilizer, and wood fibre mulch have been applied.
14.	August 29, 1985	Area of Waste Pile P-6 and the Small Earth Dam after seed, fertilizer, and wood fibre mulch have been applied.